C) AMENDMENTS TO THE CLAIMS

1. (original) A method of increasing the output capacity of a screw compressor, the method comprising the steps of:

providing a motor having a predetermined rated operational voltage and frequency, wherein the predetermined rated operational voltage and frequency of the motor generates a predetermined output speed of the motor;

providing a variable speed drive capable of supplying a voltage and frequency to the motor greater than the predetermined rated operational voltage and frequency of the motor;

connecting a screw compressor to the motor, the screw compressor having a predetermined output capacity in response to operation at the predetermined output speed of the motor;

operating the variable speed drive to supply a voltage and frequency to the motor greater than the predetermined rated operational voltage and frequency of the motor, the motor generating an output speed greater than the predetermined output speed of the motor as a result of the supplied voltage and frequency to the motor being greater than the predetermined rated operational voltage and frequency of the motor; and

driving the screw compressor at the generated output speed of the motor greater than the predetermined output speed of the motor to obtain an output capacity from the screw compressor greater than the predetermined output capacity of the screw compressor.

2. (original) The method of claim 1 further comprising the step of operating the motor in a constant flux mode of operation.

3. (original) The method of claim 1 further comprising the step of boosting the output voltage of the variable speed drive to be at least twice an input voltage to the variable speed drive.

4. (original) The method of claim 3 wherein the predetermined rated operational voltage of the motor is substantially equal to the input voltage to the variable speed drive.

5. (original) The method of claim 1 wherein the predetermined rated operational voltage of the motor is less than an input voltage to the variable speed drive.

6. (original) The method of claim 1 further comprising the step of eliminating a slide valve for capacity control from the screw compressor.

7. (original) A compression system comprising:

a motor having a predetermined rated operational voltage and frequency, the motor being configured to generate a predetermined output speed in response to operation at the predetermined rated operational voltage and frequency;

a variable speed drive connected to the motor to power the motor, the variable speed drive being configured to supply a variable output voltage and variable output frequency to the motor, the variable output voltage and variable output frequency ranging between an output voltage and output frequency less than the predetermined rated operational voltage and frequency and an output voltage and output frequency greater than the predetermined rated operational voltage and frequency;

a screw compressor connected to the motor, the screw compressor being configured to provide a predetermined output capacity in response to being driven at the predetermined output speed of the motor; and

wherein the motor generates an output speed greater than the predetermined output speed in response to operation at a supplied voltage and frequency greater than the predetermined rated operational voltage and frequency and the screw compressor provides an output capacity greater than the predetermined output capacity in response to being driven at an output speed of the motor greater than the predetermined output speed of the motor.

8. (original) The compression system of claim 7 wherein the variable speed drive is configured to provide an output voltage to the motor greater than an input voltage to the variable speed drive.

9. (original) The compression system of claim 8 wherein the variable speed drive is configured to provide an output voltage to the motor that is at least twice the input voltage to the variable speed drive.

10. (original) The compression system of claim 9 wherein the predetermined rated operational voltage of the motor is substantially equal to the input voltage to the variable speed drive.

11. (original) The compression system of claim 7 wherein the predetermined rated operational voltage of the motor is less than an input voltage to the variable speed drive.

12. (original) The compression system of claim 7 wherein the variable speed drive supplies an output voltage and output frequency to the motor to permit the motor to operate in a constant flux mode of operation.

13. (original) The compression system of claim 7 wherein the screw compressor has increased rotor seal in response to being driven at an output speed of the motor greater than the predetermined output speed of the motor.

14. (original) The compression system of claim 7 wherein the screw compressor is configured to omit a slide valve to reduce gas leakage in the screw compressor.

15. (original) A chiller system comprising:

a first refrigerant circuit, the first refrigerant circuit comprising a first compressor, a first condenser arrangement and a first evaporator arrangement connected in a closed refrigerant loop;

a second refrigerant circuit, the second refrigerant circuit comprising a second compressor, a second condenser arrangement and a second evaporator arrangement connected in a closed refrigerant loop;

a first motor connected to the first compressor to drive the first compressor, the first motor having a predetermined rated operational voltage and frequency, the first motor being configured to drive the first compressor at a predetermined speed in response to the predetermined rated operational voltage and frequency of the first motor being provided to the first motor, and the first compressor having a predetermined capacity in response to being driven at the predetermined speed;

a second motor connected to the second compressor to drive the second compressor, the second motor having a predetermined rated operational voltage and frequency, the second motor being configured to drive the second compressor at a predetermined speed in response to the predetermined rated operational voltage and frequency of the second motor being provided to the second motor, and the second compressor having a predetermined capacity in response to being driven at the predetermined speed;

at least one variable speed drive connected to the first motor and the second motor to power the first motor and the second motor; the at least one variable speed drive being configured to supply a variable output voltage and variable output frequency to the first motor and the second motor, the variable output voltage and variable output frequency ranging between an output voltage and output frequency less than the predetermined rated operational voltages and frequencies of the first motor and the second motor and an output voltage and output frequency greater than the predetermined rated operational voltages and frequencies of the first motor and the second motor;

wherein the first motor drives the first compressor at a speed greater than the predetermined speed in response to a supplied output voltage and output frequency from the at least one variable speed drive being greater than the predetermined rated operational voltage and frequency of the first motor, the first compressor provides an output capacity greater than the predetermined output capacity in response to being driven by the first motor at an output speed greater than the predetermined output speed; and

wherein the second motor drives the second compressor at a speed greater than the predetermined speed in response to a supplied output voltage and output frequency from the at least one variable speed drive being greater than the predetermined rated operational voltage and frequency of the second motor, the second compressor provides an output capacity greater than the predetermined output

capacity in response to being driven by the second motor at an output speed greater than the predetermined output speed.

16. (original) The chiller system of claim 15 wherein the first compressor and the second compressor are screw compressors.

17. (original) The chiller system of claim 16 wherein the first screw compressor and the second screw compressor each have increased rotor seal in response to being driven at a speed greater than the predetermined speed.

18. (original) The chiller system of claim 16 wherein the first screw compressor and the second screw compressor are configured to omit a slide valve to reduce gas leakage in the first screw compressor and the second screw compressor.

19. (original) The chiller system of claim 15 wherein the at least one variable speed drive comprises:

a first variable speed drive connected to the first motor to power the first motor; and

a second variable speed drive connected to the second motor to power the second motor.

20. (original) The chiller system of claim 15 wherein the at least one variable speed drive comprises a single variable speed drive having a first inverter section connected to the first motor and a second inverter section connected to the second motor.

21. (original) The chiller system of claim 15 wherein the predetermined rated operational voltage and frequency of the first motor and the second motor is 138 VAC and 60 Hz.

22. (original) The chiller system of claim 21 wherein the at least one variable speed drive is configured to supply an output voltage of 460 VAC and an output frequency of 200 Hz to the first motor and the second motor.

23. (original) The chiller system of claim 21 wherein the variable output frequency supplied by the at least one variable speed drive ranges from about 20 Hz to about 200 Hz.

24. (original) The chiller system of claim 15 wherein the first compressor and the second compressor each comprise a muffler system.

25. (original) The chiller system of claim 15 wherein the first condenser arrangement and the second condenser arrangement each comprise a portion of a combined condenser system.

26. (original) The chiller system of claim 25 wherein the combined condenser system is air-cooled.

27. (original) The chiller system of claim 15 wherein the first evaporator arrangement and the second evaporator arrangement each comprise a portion of a combined evaporator system.

28. (original) The chiller system of claim 15 further comprising a VSD cooling system to cool the at least one variable speed drive.

29. (original) The chiller system of claim 28 wherein the VSD cooling system comprises a brine loop of an ethylene-glycol and water mixture.

30. (original) The chiller system of claim 28 wherein the VSD cooling system comprises a brine loop of a propylene-glycol and water mixture.

31. (original) The chiller system of claim 30 wherein the first condenser arrangement, the second condenser arrangement and the brine loop of the VSD cooling system each comprise a portion of a combined condenser system.

32. (original) The chiller system of claim 31 wherein the combined condenser system is air-cooled.

33. (original) The chiller system of claim 15 wherein:

the first refrigerant circuit comprises a first economizer; and

the second refrigerant circuit comprises a second economizer.

34. (amended) The chiller system of claim ~~32~~ 33 wherein the first economizer and the second economizer each comprise a flash tank.

35. (original) The chiller system of claim 15 wherein the first refrigerant circuit and the second refrigerant circuit each circulate R-134a refrigerant.